

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
23 June 2005 (23.06.2005)

PCT

(10) International Publication Number
WO 2005/056765 A2

(51) International Patent Classification⁷:

C12N

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:

PCT/US2004/040977

(22) International Filing Date: 3 December 2004 (03.12.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/527,920 8 December 2003 (08.12.2003) US

(71) Applicant (for all designated States except US): PRESIDENT AND FELLOWS OF HARVARD COLLEGE [US/US]; 17 Quincy Street, Cambridge, MA 02138 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): GREEN, Howard [US/US]; Harvard Medical School, 240 Longwood Avenue, Boston, MA 02115 (US). IUCHI, Shiro [JP/US]; Harvard Medical School, 240 Longwood Avenue, Boston, MA 02115 (US). EASLEY, Karen [US/US]; Harvard Medical School, 240 Longwood Avenue, Boston, MA 02115 (US).

(74) Agent: ANDERSON, MaryDilys; Wolf, Greenfield & Sacks, P.C., 600 Atlantic Avenue, Boston, MA 02210 (US).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHODS FOR CULTURING KERATINOCYTES FROM HUMAN EMBRYONIC STEM CELLS

ES → I(Oct4⁻) → II(p63⁺) → III(p63⁺,K14⁺,Bn⁺)

Keratinocyte



Multiplication



Terminal Differentiation
(Inv⁺)

WO 2005/056765 A2

(57) Abstract: The invention relates to methods for isolating and culturing human keratinocytes from embryonic stem cells. The methods are useful for producing substantially pure cultures of keratinocytes.